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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/658,321	09/08/2000	Gerhard J. Mueller	GK-ZEI-3103/ 500343.20100	3537

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EXAMINER

NGUYEN, THONG Q

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 01/29/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/658,321

Applicant(s)

MUELLER ET AL.

Examiner

Thong Q. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 3/6/01 and Election of 11/7/01.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-31 is/are pending in the application.
- 4a) Of the above claim(s) 21,22,27,29 and 30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-20,23-26,28 and 31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 September 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☒ Interview Summary (PTO-413) Paper No(s). 10
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Species (b) which claims the invention shown in figure 2 in Paper No. 9 of 11/07/2001 is acknowledged. The traversal is on the ground(s) that it would be more efficient to prosecute the present application as one application in view of the Patent Business Goals for compact prosecution. This is not found persuasive because of the following reasons: First, the reason based on the purpose of Patent Business Goals is not a reason to negate a requirement of a proper election of species; Second, applicant has failed to show that the different species recited in the present application is not patentable from each other.

The requirement is still deemed proper and is therefore made FINAL.

As a result of applicant's election, claims 16-20, 23-26, 28 and 31 are examined in this Office action, and claims 21-22, 27 and 29-30 have been withdrawn from further consideration as being directed to non-elected species.

It is noted that in the Election, page 2, applicant has stated that the claims readable from figure 2 are claims 17-20, 23-26 and 28-31. The Examiner respectfully disagrees because each of claims 29 and 30 is dependent upon claim 27 which claims is grouped into the species (a) which is not elected by the applicant.

Priority

2. With regard to the priority of the present application, there is a problem occurred.

The present application was filed as of 09/08/2000 and claimed a priority based on the Germany application serial number 199 42 998.7 filed in Germany on

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09/09/1999. However, when the application was filed in the United States of American, the application was filed in a language other than English. A notice of missing parts was mailed to applicant on 10/25/2000.

In response to the Notice of missing parts, applicant has filed an extension of time and papers to place the application in its complete form; however, the case as now has a filing date of 03/06/2001 recorded by the Office. As a result, the claim based on 35 USC 119 is not satisfied. Applicant must file a request to clarify the filing date of the present application.

Drawings

3. The drawings contain two sheets of figures 1-2 filed by applicant have been received by the Office.

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the feature concerning the diaphragms, the prisms, polarizers, etc... as recited in claim 19; the feature concerning the deformable mirror system with its operative mechanism as recited in claim 24; and the feature concerning the adjusting device for displacement of one of the objective is axial and/or radial direction as recited in claim 28 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

) Reply

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

5. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

6. The Summary of the invention as provided in the present application is objected to because it is too long and contains numerous details of the invention. Applicant should provide a brief summary of the invention as stated in the 37 CFR 1.73, see also MPEP 608.01(d), and transfer other description to the section of "Description of the Preferred Embodiments".

7. The disclosure is objected to because of the following informalities: a) Page 6: line 28, "the microscope beam path 8" should be changed to —dichroic beam splitter 8— (see page 7 on lines 4 and 13); b) Page 7; lin2 1, what does applicant means by "detected by the microscope objective 3 as well as by objective 3"? There are some grammatical and idiomatic errors in the specification. Applicant should carefully proofread the specification. Appropriate correction is required.

8. The incorporation of essential material in the specification by reference to a foreign application or patent, or to a publication is improper. Applicant is required to amend the disclosure to include the material incorporated by reference. The amendment must be accompanied by an affidavit or declaration executed by the applicant, or a practitioner representing the applicant, stating that the amendatory material consists of the same material incorporated by reference in the referencing

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application. See *In re Hawkins*, 486 F.2d 569, 179 USPQ 157 (CCPA 1973); *In re Hawkins*, 486 F.2d 579, 179 USPQ 163 (CCPA 1973); and *In re Hawkins*, 486 F.2d 577, 179 USPQ 167 (CCPA 1973).

The incorporation of an adaptive mirror disclosed in the foreign application DE 26 31 551 for the purpose of support for the structure of the mirror system recited in the present claim 24 is not acceptable.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claim 17 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 17 is rejected under 35 USC 112, first paragraph because the specification fails to provide at least one example or sufficient information for an objective system in the form of planapochromats having a numerical aperture greater than or equal to 1.4. Applicant should note that a statement about the optical features of the lens system without providing an example of the lens structure is not considered as sufficient information to enable one skilled in the art to make the invention without undue experimentation.

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 16-20, 23-26 and 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a) Claim 16 is unclear by the use of the terms "may be" in the claim. Such use of that terms will render the claim indefinite because it is unclear whether the components/functions appeared after that terms are positively features/components of the inventive device claimed or not. Second, the feature "said objectives...optical characteristics" (line 3) is indefinite by the use of the term "approximately" in the mentioned feature. It is unclear what optical characteristics are the same for the objectives, and what optical characteristics are not the same for the objectives.

b) Claim 18 is indefinite because the feature "the image information" (line 2) lacks a proper antecedent basis.

c) Claim 19 is indefinite because 1) the feature "other subassemblies" (line 2) is indefinite. What "other subassemblies" does applicant imply here? 2) the feature "the beam path" (lines 2-3) lacks a proper antecedent basis; and 3) the use of the term "and/or" (line 2) makes the claim indefinite because it is unclear about the structure of the inventive device.

d) Claim 24 is indefinite because it is unclear about the structure of the adaptive mirror which applicant intends to claim here? The claim discloses two different structures of the adaptive mirror concerning the "electrodes v. piezoelectric

drives" and "electrostatic forces v. piezoelectric drives". While applicant is allowed to make different dependent claims for different structures where the structures are not patentable with respect to each other; however, a combination of different structures inside one claim will make the claim indefinite. Further, what does applicant mean by "different ways" (last line of the claim)?

e) Claim 25 is indefinite. The claim recites the feature "the electrodes and/or the piezoelectric drives" (lines 1-2) communicate with a detection device. Such feature is indefinite because only one, i.e., the electrodes or the piezoelectric drives, is able to connect to the detection device. In other words, if the electrodes are used then the piezoelectric drives are not present and vice versa.

f) Claim 28 is indefinite because the feature "the assessment of the observation beam path" (lines 3-4) is indefinite. What "the assessment" does applicant imply here?

g) Each of claims 25 and 31 is indefinite because the feature "the observation beam path" (claim 25, line 3; claim 31, line 2) lacks a proper antecedent basis.

h) The remaining claims are dependent upon the rejected base claim and thus inherit the deficiencies thereof.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. Claims 16, 18-20, 26 and 28, as best as understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Muller et al (U.S. Patent No. 4,515,445).

Muller et al disclose a microscope system having an illuminating device. The microscope comprises two objective lens systems disposed on opposite sides of a specimen wherein the two objective systems have the similar optical characteristics and high numerical apertures and infinite output intersection length. A mirror (17) is arranged after one of the objective (15) and acts as a phase-conjugating mirror for the purpose of reflecting the light from the specimen passing through the objective (15) back to the specimen. At column 4, Muller et al teach that 1) one of the objective system (15) is able to move along the illuminated light path for the purpose of varying the intensity or contrast ; and 2) other optical elements such as Wollaston prisms, diaphragms can be arranged in the light path for obtaining different results.

15. Claims 16, 18-21, 26 and 31, as best as understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Ellis et al (U.S. Patent No. 5,035,476).

Ellis et al disclose a microscope system having an illuminating device. The microscope comprises two objective lens systems disposed on opposite sides of a specimen wherein the two objective systems have the similar optical characteristics and high numerical apertures and infinite output intersection length. A mirror (64) is arranged after one of the objective (63) and acts as a phase-conjugating mirror for the purpose of reflecting the light from the specimen passing through the objective (63) back to the specimen. At columns 4 and 6,

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Ellis et al teach that 1) a dichroic beam-splitter can be used in place of the beam-splitter (54) in an application involves fluorescent illumination; and a detecting system is coupled with the microscope for detecting the fluorescent image. It is also noted that other optical elements such as lens system can be arranged in the light path for obtaining different results.

16. Claims 16, 18-20, 23 and 26, as best as understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Yonezawa (Japanese reference No. 5-288992).

Yonezawa discloses a microscope system having an illuminating device. The microscope comprises two objective lens systems (6,9) disposed on opposite sides of a specimen (8) wherein the two objective systems have the similar optical characteristics and high numerical apertures and infinite output intersection length. A curved mirror (11) is arranged after one of the objective (9) and acts as a phase-conjugating mirror for the purpose of reflecting the light from the specimen passing through the objective (9) back to the specimen. Yonezawa also teach the use of additional optical element such as a polarizing element (10) can be arranged in the light path for obtaining different results.

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. Claims 17 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yonezawa in view of Muller et al.

The microscope having an illuminating system and two objective lens systems disposed on the opposite sides of a sample wherein a curved mirror follows one of the objective lens system as provided by Yonezawa meets all of the features recited in present claims 17 and 28 except the feature concerning the numerical aperture of the objective lens system, and the movement of one of the objective lens systems. However, the use of a microscope having two objective lens systems on opposite sides of a sample wherein the objective lens system has a high numerical aperture, and one of the objective lens system is able to move for adjusting the illumination/observation manner is clearly disclosed in the art as can be seen in the microscope provided by Muller et al. See abstract and column 4. See also *In re Wertheim*, 541 F. 2d 257, 191 USPQ 90 (CCPA 1976), "the disclosure in the prior art of any value within a claimed range is an anticipation of that range." Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the microscope provided by Yonezawa by using microscope objective lens system having high numerical aperture and moving one of the objective lens system as suggested by Muller et al for the purpose of providing a better optical performance.

19. Claims 21 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yonezawa in view of Ellis et al.

The microscope having an illuminating system and two objective lens systems disposed on the opposite sides of a sample wherein a curved mirror follows one of the objective lens system as provided by Yonezawa meets all of the features recited in present claims 21 and 31 except the feature concerning the use of a dichroic splitter and a detecting device. However, the use of a microscope having two objective lens systems on opposite sides of a sample wherein the microscope comprises a dichroic beam splitter and a detecting system for illuminating and/or detecting a sample having fluorescent agent is clearly disclosed in the art as can be seen in the microscope provided by Ellis et al. See columns 4 and 6. Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the microscope provided by Yonezawa by utilizing a dichroic beam splitter and a detecting system as suggested by Ellis et al for the purpose of illuminating and/or detecting a sample in a fluorescent application.

20. Claims 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yonezawa in view of Lanni et al (U.S. Patent No. 5,801,881).

The microscope having an illuminating system and two objective lens systems disposed on the opposite sides of a sample wherein a curved mirror follows one of the objective lens system as provided by Yonezawa meets all of the features recited in present claims 24-25 except the feature concerning the type of the mirror and the mechanism for operating the mirror. However, the use of a microscope having a deformable mirror and a mechanism for operating the mirror

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is clearly disclosed in the art as can be seen in the microscope provided by Lanni et al. See columns 5-7. Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the microscope provided by Yonezawa by utilizing a mirror having a mechanism for controlling the operation of the mirror as suggested by Lanni et al for the purpose of illuminating and/or detecting a sample for satisfying requirement of a particular application.

Conclusion

21. The additional references are cited as of interest in that each discloses a microscope having an illuminating system, and the microscope comprises two objective lens system disposed on opposite sides of a specimen wherein one mirror is disposed after one of the objective lens system.

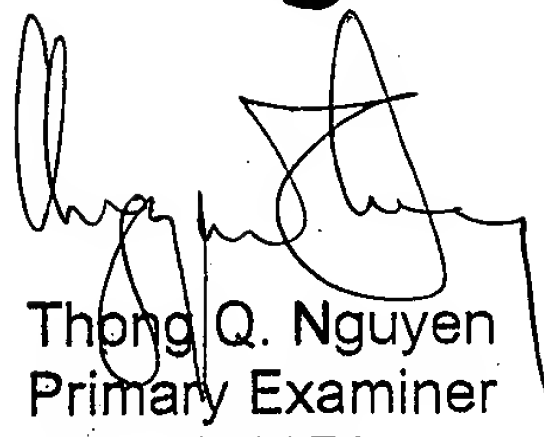
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thong Q. Nguyen whose telephone number is 703 308 4814. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on 703 308 1687. The fax phone numbers for the organization where this application or proceeding is assigned are 703 308 7724 for regular communications and 703 308 7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0956.

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Thong Q. Nguyen
Primary Examiner
Art Unit 2872

January 22, 2002